

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Ricardo L. de Queiroz

Application No.: Divisional of 09/191,245

Filed: 11/13/98

Examiner: S. Brinich

Art Unit: 2624

Title: BLOCKING SIGNATURE DETECTION
FOR IDENTIFICATION OF JPEG IMAGES

Commissioner for Patents
Washington, D.C. 20231

Sir:

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to: Assistant Commissioner for Patents, Washington, D. C. 20231, on

11/9/01

(Name of applicant, assignee,
or Registered Representative)


(Signature)
Helen Paulino

November 9, 2001

PRELIMINARY AMENDMENT

With respect to the above-listed Divisional Application to USSN 09/191,245, applicant requests the following preliminary amendment.

Claims 1-24 and 26-29 are cancelled.

25. (Amended) A method to detect if an image is compressed, comprising the steps of:

- (a) detecting blocking artifacts presented in the form of discontinuities across block boundaries in the image, said blocking artifacts thereby being indicative of compression; and
- (b) providing an output indicative of compression in response to the detection of the blocking artifacts.

REMARKS

Claim 25 in the parent application 09/191,245 was rejected under 35 USC 102(e) as being anticipated by Hintzman et al.

In the interest of expediting prosecution, Applicant has amended claim 25 to more clearly denote the claimed detection of blocking artifacts in an image. As was originally stated in the Specification at page 4, lines 14-18:

‘Thus, discontinuities across block boundaries (blocking effects) account for the most noticeable compression artifact caused by JPEG compression. The higher the compression the higher the blocking. The present invention performs an analysis of the blocking discontinuities as an indicative of compression history.’

Claim 25 has been amended to include this reference to discontinuities across block boundaries as the detected blocking artifacts.

Should the Examiner consider maintaining the prior rejection, Applicant respectfully traverses. Hintzman et al. (hereinafter, the reference) discloses a Huffman decoder. The Examiner alleges that claim 25 reads upon the reference, at col. 5, lines 11-24, and in particular the disclosure of the detection of “byte boundary information in the input data stream”.

Claim 25, as originally filed, claims:

“...detecting blocking artifacts in the image indicative of compression...”

The cited reference discloses merely the detection of byte boundary information in a Huffman code word coefficient pair by use of a 4-bit string on bus 202 to a RLL detector 203. (See col. 2, lines 6-10; col. 4, lines 17-22.) There is no disclosure or teaching of the claimed detection of blocking artifacts in an image, with such artifacts being detected for the purpose of an indication of compression.

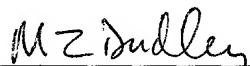
The Examiner erroneously equates the byte boundaries in a jpeg bit stream with the block boundaries of an image. A JPEG bit stream represents a compressed image which may eventually be displayed... if decompressed properly. During the phase in which the bit stream represents the compressed image, and thus the image is available for storage in memory, the image is an abstraction. Accordingly, the "byte boundaries" disclosed in the reference have no relation to the "block boundaries" claimed in claim 25. Blocks in a JPEG encoding scheme are represented by a variable amount of bits which are not byte-aligned, in general.

The Examiner appears to have used hindsight knowledge of the claimed method to attempt, in error, to equate detection of byte boundary information in a Huffman code word, with the claimed detection of blocking artifacts in an image.

Furthermore, the Examiner supported the rejection upon alleged disclosure of the second claimed step in claim 25, that is, "providing an output indicative of compression upon *detection of the blocking artifacts.*" (Emphasis added.) While the reference may describe, at col. 5, lines 24-25, detection of "JPEG markers", such detection is not equivalent to the claimed "*detection of the blocking artifacts*". The reference teaches neither detection of blocking artifacts, nor any ouput indicative of same.

All claims are believed to be in condition for allowance. Applicant respectfully requests reconsideration. No additional fee is believed to be required for this amendment. However, the undersigned Xerox Corporation attorney hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation, Deposit Account No. 24-0025.

Respectfully submitted,



Mark Z. Dudley
Attorney for Applicant(s)
Registration No. 33,110
(716) 423-6456

MZD/hp
November 9, 2001
Xerox Corporation
Xerox Square 20A
Rochester, New York 14644

AMENDED CLAIMS SHOWING REVISIONS

Claims 1-24 and 26-29 are cancelled.

25. (Amended) A method to detect if an image is compressed, comprising the steps of:

- (c) detecting blocking artifacts presented in the form of discontinuities across block boundaries in the image, said blocking artifacts thereby being indicative of compression; and
- (d) providing an output indicative of compression upon in response to the detection of the blocking artifacts.